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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/715,576

11/17/2003

Gary Dean Sasser

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10/30/2006

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EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/715,576

Applicant(s)

SASSER ET AL.

Examiner

Michelle R. Connelly-Cushwa

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-25 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/16/06</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed July 27, 2006 has been fully considered and entered.

The indicated allowability of claims 11-17 and of the subject matter of previous claim 7 is withdrawn in view of the newly discovered reference(s) to Yunker et al. (US 6,854,894 B1). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 2-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 2; the claim recites the limitation "the outer cage" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 3-6; the claims inherently contain the deficiencies of any base or intervening claims from which they depend.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-5, 8-20, 22-25 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yunker et al. (US 6,854,894 B1) in view of Chiu et al. (US 7.118.281 B2).**

Regarding claims 1, 2, 18 and 29-31; Yunker et al. discloses an integrated optoelectronic module array (see Figures 3-5), comprising:

- a component structure (502) including a plurality of optoelectronic sub-modules (512, 514, 516), each of which comprise an optical transceiver module (see column 8, lines 24-26),
- the plurality of optical transceiver sub-modules (512, 514, 516) integrated into a single structure,
- the component structure being integrally formed such that each optoelectronic sub-module shares at least one wall portion with an adjacent optoelectronic sub-module (see column 8, lines 37-39),
- an optional outer cage (see column 8, lines 51-53);
- wherein the outer cage (312) is affixed to a host board (308 in Figure 3).

Yunker et al. does not disclose a latching mechanism.

Chiu et al. teaches a retention and release mechanism for holding a fiber optic module affixed to a module receptacle and for de-latching or unplugging the module from the receptacle (see column 13, lines 26-29). And, Chiu et al. teaches that the retention and release mechanism is particularly applicable to an SFP fiber optic module and an SFP cage assembly or module receptacle (see column 13, lines 29-31). The

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assembly disclosed by Yunker et al. is an SFP assembly (see column 1, lines 33-36; column 4, lines 60-65; and column 6, lines 49-52 of Yunker et al.)

Therefore, given the explicit suggestion of Chiu et al. to use the retention and release mechanism in an SFP assembly and the SFP assembly taught by Yunker et al., one of ordinary skill in the art would have found it obvious to incorporate the retention and release mechanism taught by Chiu et al. in the SFP assembly disclosed by Yunker et al. in order to retain and release the fiber optic modules from the receptacle/cage assembly of Yunker et al.

Regarding claim 3; the host board (308) is contained with the optical device disclosed by Yunker et al., and since the optical device includes an optical transceiver, an optical signal is at least routed to and from the optical device, and therefore, the device forms part of an optical router.

Regarding claim 4; an optical interface portion of the component structure extends from a first open end of the outer cage (312), and a plurality of printed circuit board card portions (the printed circuit board card portions are comprised of portions of the host board, which are integrally formed as a printed wire assembly, PWA) extends from a second open end of the outer cage.

Regarding claim 5; the optical interface portion includes at least one optical port (322 and 324 in Figure 3; 528, 530, 532, 534, 536, 538 in Figure 5) for each of the optoelectronic sub-modules.

Regarding claim 8; the outer cage provides EMI shielding for the sub-modules (see column 6, lines 52-56 and column 8, lines 51-53 of Yunker et al.).

Regarding claim 9; Yunker et al. discloses a housing (chassis, 504) that contains at least a portion of the component structure.

Regarding claim 10; the component structure is configured to minimize spacing between the optoelectronic sub-modules (see column 8, lines 44-49 of Yunker et al.).

Regarding claims 11 and 19; the proposed combination of Yunker et al. and Chiu et al. teaches all of the limitations of claim 11 as applied to claims 1-5, 8-10 and 18 above.

Regarding claims 12 and 22; Yunker et al. does not explicitly state that four optical transceiver sub-modules are included in the component structure, however, Yunker et al. does teach that although the multi-transceiver assemblies are illustrated with specific numbers of transceivers (e.g. 3), it should be appreciated that multi-transceiver assemblies of any numbers are considered part of the invention (see column 14, lines 53-59). Therefore, one of ordinary skill in the art would have found it obvious to incorporate 4 transceiver sub-modules in the invention of Yunker et al., since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art (*St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8), and since Yunker et al. suggests that any number of transceiver sub-modules may be contemplated, for the purpose of increasing the amount of information that may be transmitted and/or received by the optical device.

Regarding claims 13 and 23; at least one optical fiber connector (ferrules: 529, 531, 533, 535, 537, 539 are part of the LC connectors) is selectively connected with at

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least one of the optical transceiver sub-modules, and a release sleeve (the ports, 528, 530, 532, 534, 536, 538) is slidably attached to the at least one fiber optical connector.

Regarding claim 14; the latching mechanism taught by Chiu et al. is at least partially attached to the component structure and includes:

- a rotatable bail (914; see Figures 14B and 14C and 16A-16I of Chiu et al.); and
- a pivot block (928) having a lock pin (910), the pivot block being pivotally attached to the rotatable bail, wherein the lock pin engages a portion of the outer cage when the bail and the pivot block are positioned in a specified configuration to selectively secure the integrated optical transceiver array.

Regarding claim 15; Yunker et al. does not explicitly state that the outer cage is positioned between the first host board and a second host board, however one of ordinary skill in the art would have found it obvious to connect the cage between first and second host boards in order to expand the capacity of the optical device.

Regarding claim 16; Yunker et al. teaches that the optical device may include a plurality of integrated optical transceiver arrays (see Figures 7A and Figure 8).

Regarding claim 17; Yunker et al. teaches that two integrated optical transceiver arrays are positioned on opposite surface of a first host board (see Figures 3 and 7A). One of ordinary skill in the art would have found it obvious to incorporate the latching mechanism taught by Chiu et al. so that the optical transceiver arrays each engage the

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first host board to which they are connected for the purpose of securing the arrays with the latching assembly taught by Chiu et al.

Regarding claim 20; the optical transceiver sub-modules disclosed by Yunker et al. each include dual optical ports (ports: 528, 530, 532, 534, 536, 538).

Regarding claims 24 and 25; both Yunker et al. and Chiu et al. teach that the connectors are LC duplex connectors, and the sleeves are shaped to correspond to the LC connectors in the invention of Yunker et al.

**Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the proposed combination of Yunker et al. (US 6,854,894 B1) and Chiu et al. (US 7,118,281 B2) and in view of Ahrens (US 6,533,470 B2).**

Regarding claims 6 and 21; the proposed combination teaches all of the limitations of claims 6 and 21, as applied above, except for a connector receptacle on the host board. Yunker et al. teaches an edge connector, as shown in Figure 3. Apart from a receptacle attached to the host board for receiving the connector being extremely well known and commonly practiced in the art, Figure 1 of Ahrens shows a receptacle (40) mounted to a host board (30) for receiving a card-edge connector (58). In fact, such a receptacle would be required in order to communicate signals to and from the host board. Therefore, it would have been obvious at the time of the invention to a person of ordinary skill in the art to include such a receptacle in order to allow signals to be communicated to and from the host board and the transmission modules.

***Allowable Subject Matter***



Claims 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art cited on the attached PTO-892 form is the most relevant prior art known, however, the invention of claims 26-28 distinguishes over the prior art of record because none of the references either alone or in combination disclose or render obvious an integrated optical transceiver module as defined in claim 26, wherein a portion of the body further defines a curved inner cam surface in combination with the other limitations of claim 26 and the limitations of base claim 18 and intervening claims 19-25. Claims 27 and 28 depend from claim 26.

Hence, there is no reason or motivation for one of ordinary skill in the art to use the prior art of record to make the invention of claims 26-28.

### ***Conclusion***

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Any inquiry of a general or clerical nature should be directed to the Technology  
Center 2800 receptionist at telephone number (571) 272-1562.

*Michelle R. Connelly-Cushwa*  
Michelle R. Connelly-Cushwa  
Patent Examiner  
October 24, 2006